

WHAT IS CLAIMED IS:

1. A data transfer apparatus interposed between a plurality of host apparatuses which perform a data transfer, and peripheral apparatuses which receive transfer data from the host apparatuses and process the data, for controlling a data transfer from the host apparatuses to the peripheral apparatuses, the data transfer apparatus comprising:

a plurality of host I/Fs disposed so as to be in a one-to one correspondence with the host apparatuses, for transmitting and receiving data to and from the corresponding host apparatuses, each of the plurality of host I/Fs having a ^{register} ~~resister~~ for holding a data transfer request from the corresponding host apparatus;

a rewritable priority table;

I/F selecting means for selecting one from among the host I/Fs holding a data transfer request, to be enabled to perform the data transfer, referring contents of the priority table; and

connecting means for connecting the host I/F which is selected by the I/F selecting means, to the peripheral apparatus.

2. The data transfer apparatus of claim 1, wherein the host I/F which is selected from among the plurality of host I/Fs by the I/F selecting means sends a data transfer

enable signal to the corresponding host apparatuses.

3. The data transfer apparatus of claim 1, wherein when a data transfer request from any one of the host apparatuses is received, a busy signal is sent to all of the host apparatuses via the host I/Fs, and the host I/F which is selected by the I/F selecting means makes the busy signal sent to the corresponding host apparatus inactive.

4. The data transfer apparatus of claim 1, wherein the registers of the host I/Fs can hold a plurality of the data transfer requests.

5. The data transfer apparatus of claim 1, wherein the rewritable priority table has a structure in which an order of arrangement of identification codes assigned to the respective host I/Fs indicates an order of priority of data transfer, and a rewriting process of transferring an identification code as identification data assigned to a host I/F which has completed the data transfer, to a lower priority of data transfer is performed.

6. The data transfer apparatus of claim 5, wherein an arbitrary number of identification codes can be assigned to each of the host I/Fs.

9. A method of controlling a data transfer apparatus interposed between a plurality of host apparatuses which perform a data transfer, and peripheral apparatuses which receive transfer data from the host apparatuses and process the data, for controlling a data transfer from the host apparatuses to the peripheral apparatuses, the method comprising the steps of:

holding data transfer requests from the host apparatuses, in host I/Fs disposed so as to be in a one-to-one correspondence with the host apparatuses;

selecting a host I/F from among host I/Fs holding a data transfer request, on the basis of an order of priority of a priority table which is rewritable, the selected host I/F being to be enabled to perform a data transfer; and

when a data transfer is completed, updating a priority of the host I/F which has completed the data transfer, in the priority table.

10. The method of controlling the data transfer apparatus of claim 9, the method further comprising the step of:

sending a data transfer enabling signal from the selected host I/F to a host apparatus corresponding thereto.

11. The method of controlling the data transfer apparatus of claim 9, the method further comprising the steps of:

when a data transfer request from any one of the host apparatuses is received, sending a busy signal to all of the host apparatuses via the host I/Fs; and

making the selected host I/F to cause the host apparatus corresponding thereto, to inactivate the busy signal.

12. A printing system comprising:

a plurality of host apparatuses for performing a data transfer;

a printing apparatus for receiving data transferred from the host apparatuses and performing a printing process; and

the above-described data transfer apparatus of claim 1, which is connected between the host apparatuses and the printing apparatus.